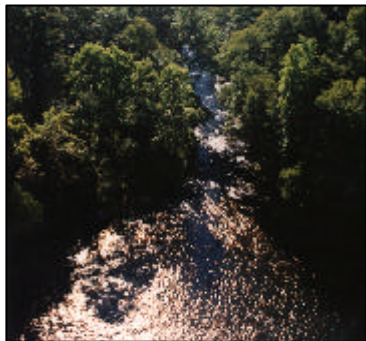


NATURAL ENVIRONMENT

INTRODUCTION



The county's land management approach is environmentally progressive in that it protects the county's remaining natural resources.

Baltimore County's more than 600 square miles contains significant areas of forests, fertile soils, streams, wetlands, and tidal rivers of the Chesapeake Bay. These environmental features provide habitats for terrestrial and aquatic wildlife and support many human uses and needs, including recreation and life-sustaining drinking water, food, and clean air.

The county's land management approach, which concentrates development into the urban area, is both efficient in that it maximizes public investment, and environmentally progressive in that it protects the county's remaining natural resources. While this approach is environmentally sensitive, specific management and other environmental issues exist. In the undeveloped rural area, the primary issues are the continued protection of the natural resources and conservation of use. In the largely developed urban area, the overriding environmental issues are protection of remaining natural

resources and restoration of lost or degraded ecosystem functions. Stream restoration, for example, not only helps maintain the water quality of the Chesapeake Bay and drinking water reservoirs, but also helps enhance aquatic habitat, reduce erosion, filter nutrients from runoff, and reduce county expenditures for the protection of infrastructure within stream systems such as sewer lines and bridge foundations. Retention of neighborhood environmental resources contributes to a higher quality of life within the county's urban areas. Natural resource features such as wooded areas, unique landforms, open spaces, and natural streams and rivers are vital ingredients of a well-balanced, livable community.



The Department of Environmental Protection and Resource Management (DEPRM) is primarily responsible for the management of Baltimore County's programs for the natural environment. DEPRM uses multiple approaches to accomplish its goals including land preservation, resource protection/regulation, restoration, facility maintenance, monitoring and research, and citizen education and participation. DEPRM's integrated resource management approach utilizes a watershed framework that addresses federal water quality mandates, and federal and state partnership initiatives for the restoration of the Chesapeake Bay and local priorities.

Sensitive Area Protection Compliance

Baltimore County is required under the Economic Growth, Resource Protection, and Planning Act of 1992 to incorporate a sensitive area protection element into its master plan. This element protects sensitive areas from the impacts of land development, including streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, and steep slopes. Although not presented separately, the county has addressed protection of these resources in the detailed management elements that follow. In particular, Baltimore County's stream protection regulations, which have been acclaimed as a model by the Local Government Advisory Committee of the Chesapeake Bay Program, provide effective protection for stream channels and their 100-year floodplains, wetlands, and adjacent erodible and steep slopes. This comprehensive view of the "stream system" affords protection through sediment control, stormwater management, and forest conservation regulations. It further ensures that adverse economic effects of development in unsuitable locations will be avoided and that beneficial ecological functions of stream corridors - for water quality, channel stability, and habitat - will be maintained.

Retention of neighborhood environmental resources contributes to a higher quality of life within the county's urban areas.



DEPRM has worked with the Maryland Department of Natural Resources to verify the presence of the limited number of threatened or endangered species and their habitats that exist in the county. Many of the habitats for these sensitive species are protected through public ownership of wildlands and other environmental management areas such as Soldiers Delight, and through the public drinking water reservoir reservations and large state-owned lands along the Patapsco River and Gunpowder Falls systems. Any threats to sensitive plant or animal species elsewhere from land development are addressed through regulatory protection of the stream systems and priority forest retention areas.

POLICIES

- Protect the remaining natural resources and promote conservation of biological diversity.
- Restore lost or degraded ecosystem functions, particularly those related to watersheds and reservoirs.
- Foster environmental stewardship among residents, and within the region.

ISSUES AND ACTIONS

Managing the county's natural environment encompasses a wide variety of resources—wetlands, streams, reservoirs, forests, mineral deposits, ground water, the Chesapeake Bay, and the air. Additional issues to be addressed involve various forms of pollution, including radon, global warming, and noise.

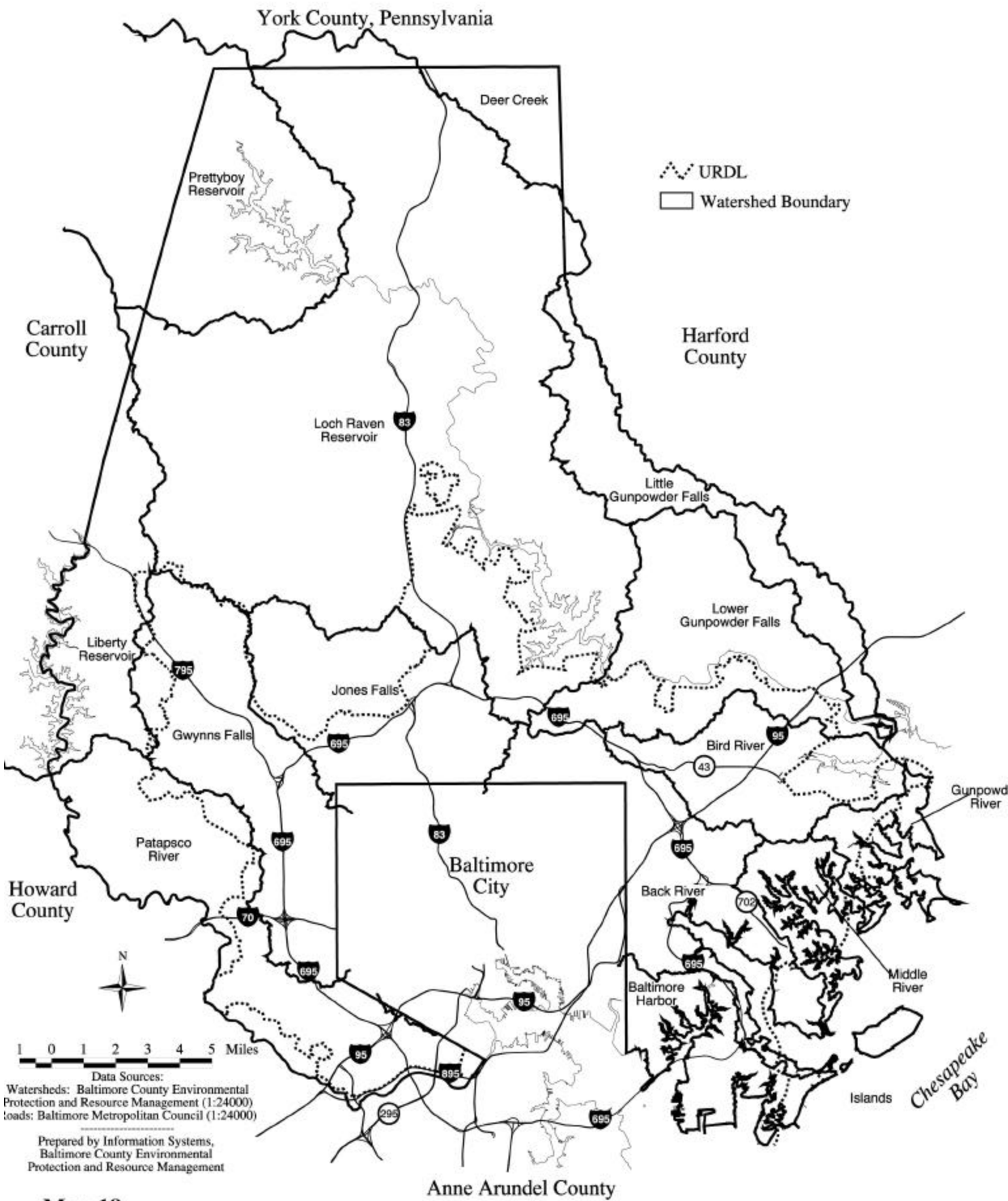
Issue: Managing Baltimore County's Watersheds

Baltimore County contains 14 major watersheds, which are identified on the basis of local stream systems and drinking water reservoirs. Seven are part of the Gunpowder River basin and six comprise the Patapsco River basin (Map 19). A watershed is an area of land from which water drains to a stream, lake, or other water body. Watersheds are a useful framework for resource management because individual resource elements such as streams and forests are linked through ecosystem processes that operate to maintain the stability of the system.

Land use activities within watersheds impact the water quality of the streams associated with the watershed, and the water bodies downstream. For example, the clearing of forests increases runoff of storm water to streams,



Watershed studies provide the framework for natural resource management.



Map 19
Watersheds



causing an increase in the sediments, nutrients, and toxins carried to the streams, and erosion of stream channels. Changes in sediment and nutrient levels can degrade the habitat quality of the stream for both plants and animals. Land preservation programs that place environmentally sensitive land in permanent easements assist in the protection of watersheds and their interrelated systems.

The county's watershed program consists of characterizing and prioritizing watersheds, preparing management plans, and evaluating resource systems and functions at varying scales from a countywide level to individual properties. Assessments of pollutant loads, stream stability, and forest community structure provide the framework for the preparation of implementation plans for capital projects, maintenance, education, and cooperative citizen actions.

Actions

1. Continue to protect streams, wetlands, floodplains, and woodlands from impacts of new development and redevelopment as required by development regulations.
2. Identify and protect the remaining high value natural resources in watersheds in order to preserve their beneficial functions for clean water, clean air, and habitat.
3. Continue projects to restore wetlands, reestablish forests, and stabilize stream channels in impacted watersheds.
4. Reduce pollution through a reduction in impervious surface area, improved management of urban runoff, and implementation of source-based controls.
5. Coordinate the management of inter-jurisdictional watersheds with surrounding jurisdictions.
6. Include environmental policies and goals in community plans for the preservation and enhancement of functional open spaces such as greenways and wildlife habitat; the reduction of water, air, and toxic pollution and solid wastes; and the promotion of neighborhood environmental stewardship.
7. Encourage and actively participate in partnerships among agencies, organizations, and communities to address environmental issues.

The county will continue projects to restore wetlands, reestablish forests, and stabilize stream channels.

Issue: Protecting the Reservoirs

Most citizens seldom stop to think about the importance of the drinking water reservoirs located in Baltimore County. The regional reservoir system,

including the Prettyboy, Liberty, and Loch Raven Reservoirs, provides a large and dependable drinking water supply for the 1.8 million people in the Baltimore metropolitan region.



Although Baltimore City owns and maintains the reservoirs and drinking water system, Baltimore County has a special responsibility for the protection of the water supply. Baltimore City manages 17,200 acres of land surrounding the reservoirs, but this land comprises only 6% of the total reservoir watershed. Careful management of the entire watershed area for the three reservoirs is important for maintaining the water quality of the reservoirs.

The continuing water quality monitoring program conducted by the City of Baltimore since 1985 indicates that the reservoirs continue to be impacted by nutrient over-enrichment. In particular, phosphorus from sewage treatment plants, agriculture, and urban development is contributing to the excessive growth of nuisance algae.

Actions

1. Continue to participate with other area jurisdictions in the cooperative regional Reservoir Watershed Management Program, including participation in the Reservoir Technical Group for coordination of program implementation under the adopted Action Strategies and preparation of progress reports.
2. Continue commitments to restrict development in the reservoir watersheds.
3. Continue to implement non-point pollution control, stream restoration projects, and sewerage improvements.
4. Continue to prioritize implementation of projects to establish riparian forest buffers along stream systems in the reservoir watersheds in cooperation with private organizations and other public agencies.
5. Continue to participate in the Comprehensive Gunpowder River Watershed Study and work to address watershed management issues arising from the study.
6. In cooperation with citizen organizations, continue to implement the ambient biological stream monitoring program in order to provide information about the impacts of land use activities on reservoir stream quality, and to assist in the evaluation and implementation of management programs.



The county will continue to participate with other area jurisdictions in the cooperative regional Reservoir Watershed Management Program.



Issue: Protecting and Restoring Streams and Non-Tidal Wetlands

Baltimore County contains more than 2,100 miles of non-tidal streams and rivers, including more than 1,000 miles of streams that drain to the three drinking water reservoirs. Overall, the county has many miles of good quality streams and rivers. Some, such as the Gunpowder Falls, are recognized as among the highest quality recreational fishery resources in the eastern United States. A stream system consists of a stream and its associated floodplain, wetlands, and springs. Wetland and riparian vegetation play an essential role in the natural functioning of a stream system, including maintaining base flow, controlling water temperature, controlling pollution, and providing habitat.

Stream quality involves both the flowing water in stream channels and the plant and animal habitat. Flowing water quality is affected by pollutants from urban runoff (non-point sources, particularly from impervious surfaces) and by pollutants discharged directly to streams (point sources). Non-point source types of pollution are varied and include nutrients, sediments, metals, pesticides, oil and grease, salts, and other particulate and dissolved matter. Point-source pollution, such as from wastewater treatment plants, industries, and other sources with a direct, piped discharge, are regulated by the state. Stream-side non-tidal wetlands are important to the maintenance of stream flow, to the removal of pollutants, and to the quality of riparian habitat.

In recent years, increased attention has been directed to the impact of storm water management on stream systems. Developed initially to protect downstream areas from flooding as a result of upstream runoff, storm water management can also erode stream channels when the stored runoff volume is discharged at a sustained level. Responses to this problem include: (1) planned revisions to the state's storm water management regulations to manage the discharge of more frequent storm events and provide better protection to stream channels; (2) re-incorporation of the natural flood function into stream restoration projects where access to floodplains for the river are possible and where no downstream areas are susceptible to flooding damage; and (3) "low impact development" approaches wherein development is designed so as to increase the travel time and infiltration of runoff and to reduce the amount of impervious surfaces.



Eroding stream channels have resulted from storm water management discharge.

Physical changes to stream systems can be worse than pollutant runoff, point source discharges, or storm water management impacts. Many county streams have been degraded by channelization, encroachment of development on floodplains, draining and filling of riparian wetlands, removal

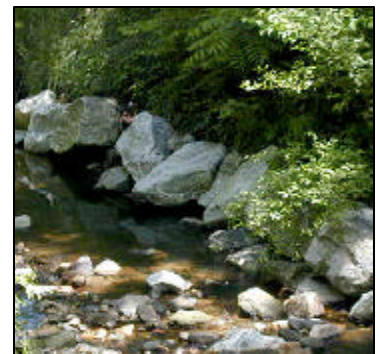
of riparian vegetation, and development or clearing of steep slopes and erodible soils adjacent to streams. Baltimore County has regulations to protect water quality, streams, wetlands, floodplains, forests, and steep or highly erodible slopes from land development impacts. In addition to these regulations, over the past ten years DEPRM staff have developed expertise in the restoration of destabilized stream channels. Reconstruction of channels employing the concepts of natural channel stability involves using natural materials such as boulders and vegetation in conjunction with reshaping of the stream channels. When properly constructed, these streams are a cost-effective and attractive means to restore physical stability, function, and habitat.



DEPRM initiated a stream biological monitoring program in fiscal year 1989 as part of its Citizens for Stream Restoration Campaign. The monitoring, conducted by citizen volunteers, measured the abundance and diversity of aquatic life as an indicator of stream quality. Summary data from the biological monitoring indicate that there is fairly widespread impairment of aquatic organisms, even if only moderate, for most of the county's streams (Map 20). Improvements to stream quality, in both water quality and habitat, will require a range of controls that best address specific types of pollution sources.

Actions

1. Continue to enforce the development regulations for the protection of water quality, streams, wetlands, and floodplains.
2. Continue to prepare watershed management plans and participate in studies to identify needs and opportunities for stream restoration, wetland creation or restoration, and storm water management.
3. Continue the design and construction of stream restoration projects, based on natural channel stability concepts.
4. Ensure inclusion of stream protection policies in all community plans. Continue to assist citizen efforts for stream clean-ups, stream surveys, watershed surveys, and other projects that improve streams.
5. Continue, in cooperation with citizen organizations, to implement and expand the stream biological monitoring program in order to measure the long-term trends in stream quality.
6. Encourage the use of "Low Impact Development" techniques for development site design in order to minimize impervious surfaces, reduce stormwater runoff and time of concentration of runoff, and increase the use of functional landscaping.
7. Identify opportunities for the creation of wetlands as mitigation for county capital projects and other land development impacts.



Reshaping and stabilizing stream channels using natural materials such as boulders and vegetation improves stream and habitat quality.



8. Continue environmental education programs for schools, businesses, and homeowners for the reduction of water pollution and toxic and solid wastes.
9. Continue to implement environmental maintenance programs such as storm drain inlet cleaning, and maintenance of stormwater management facilities.

Issue: Managing Forest Resources

Baltimore County contains approximately 132,500 acres of forest and tree cover extending over 34.6% of the county's land area. The county's largest public-owned forest blocks, totaling 30,800 acres, are primarily in the three drinking water reservoirs; the Gunpowder Falls and Patapsco State Parks; the Soldiers Delight Natural Environment Area; Robert E. Lee Park; and Oregon Ridge Park. Only about 13,000 acres of the county's forests in private ownership occur in large blocks, and most of these are adjacent to the large public-owned areas.

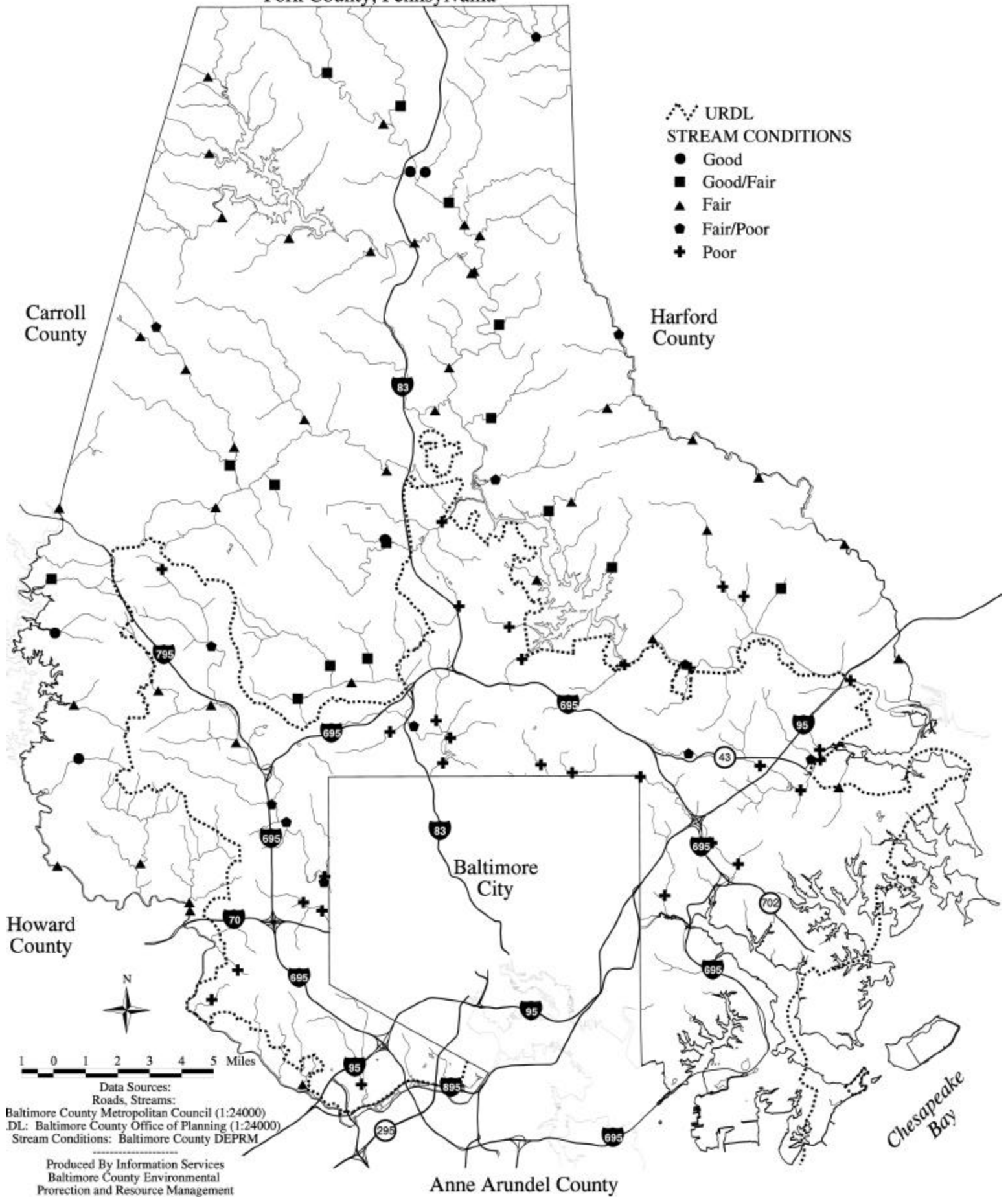
Maryland's forests regulate the hydrologic and nutrient cycles of watersheds through the process of transpiration of water vapor from leaves to the atmosphere and retention of nutrients in leaves, which fall to the forest floor to decompose and become the source of dissolved nutrients for future uptake by trees. The critical role of the forest canopy in moderating temperature, light, and humidity in this process is well established. Also, because trees are relatively long-lived, they provide stable environments for a wide range of plants and animals that exist in the different layers or strata of the forest.



Preservation of the county's forest resources promotes habitat and water quality.

The clearing of forests for agriculture, forest products and land development, in association with ownership patterns, land use controls, and harvesting regulations, has resulted in a pattern of widespread forest fragmentation. The resulting impacts on the structure of the forest ecosystem directly affect the continued ecological function of the forest as a system and the associated benefits provided for people and other creatures. From a habitat perspective, forest decline is more of an issue for species that require large forest blocks, such as some species of birds, than for species that can utilize backyard gardens and community parks. For those areas such as streams and non-tidal wetlands where biological diversity is greatest, intact forest ecosystems are essential to maintain native communities. Promoting habitat and water quality functions of riparian forested buffers, in particular, is a major theme of the cooperative multi-state Chesapeake Bay Program.

York County, Pennsylvania



Map 20
Stream Conditions 1990-1995



Forest cover is needed to meet the demand for harvesting as well as to sustain ecological functions.

Forests are also important for the production of lumber and other forest products. Regulations for forest harvesting, however, provide little protection of the ecological functions of forests beyond requirements for a minimal stream buffer and management measures to control erosion from the harvesting process. Additionally, while the regeneration of forests to pre-harvest conditions often requires many decades, forest harvesting is often repeated in much shorter cycles. Forest harvesting represents the greatest threat to the ecological functioning of the large private forest patches in the county, particularly in the rural areas. There is insufficient total forest cover in most watersheds to meet the demand for harvesting while sustaining ecological functions for stream and habitat stability.

Baltimore County's Forest Conservation Act of 1992 was passed pursuant to requirements of the Maryland Forest Conservation Act of 1991, the nation's first statewide forest protection measure. Through this law, developers are required to preserve or reestablish forests on development sites, or provide mitigation through off-site plantings or through the payment of fees to the county. Establishment of areas for mitigation of forest losses may be another alternative for meeting forest retention requirements.

DEPRM has recently conducted research for the Maryland Department of Natural Resources to develop and test a methodology to identify forest corridors for multiple ecological benefits (Map 21). While some species can survive in smaller patches, many forest dwellers require the larger interior forest habitats (greater than 200 acres) to exist. In addition to showing the dwindling large patch resource, the map identifies opportunities to connect and thereby enlarge fragmented areas.

DEPRM is preparing a countywide Forest Resource Management Plan that will describe core priority forest reserves and corridors for protection, and identify priority gaps for reforestation and the possible acquisition of conservation easements. Acquisition of easements over the years has already afforded considerable protection of existing forest, with 1,287 acres (44%) of Maryland Environmental Trust conservation easements purchased from FY 1992 to FY 1996 in forest cover. In addition, 565 acres (19%) of agricultural land preservation easements from FY 1991 to FY 1996 were in forest cover.

Actions

1. Continue to implement the local Forest Conservation Act as required



by the Maryland Forest Conservation Act of 1991, and evaluate its effectiveness.

2. Continue to conduct research on forest resource management issues and complete preparation of the Forest Resource Management Plan.
3. Increase the acreage of riparian forest buffers and the reforestation of other priority forest corridors and gaps.
4. Continue to provide support for the county Forest Conservancy District Board's programs for education of citizens about forest resource issues and for planning and implementation of reforestation projects.
5. Develop and ensure inclusion of reforestation policies in community plans and community conservation efforts.
6. Continue to promote the Tree-Mendous Maryland Program for community reforestation, including assisting communities with tree orders and delivery.

Issue: Protecting Plant and Animal Habitats (Biological Diversity)

Many of the issues related to protecting plant and animal habitats have been discussed as important components of stream and forest preservation. Traditionally, another important habitat issue is the protection of rare, threatened, or endangered plants and animals. DEPRM takes a broad view in habitat preservation, including not only the protection of rare or significant species, but also assuring long-term conservation of the habitats for upland, forest, riparian, wetland and aquatic plants and animals. This broader concept is called biological diversity.

Actions

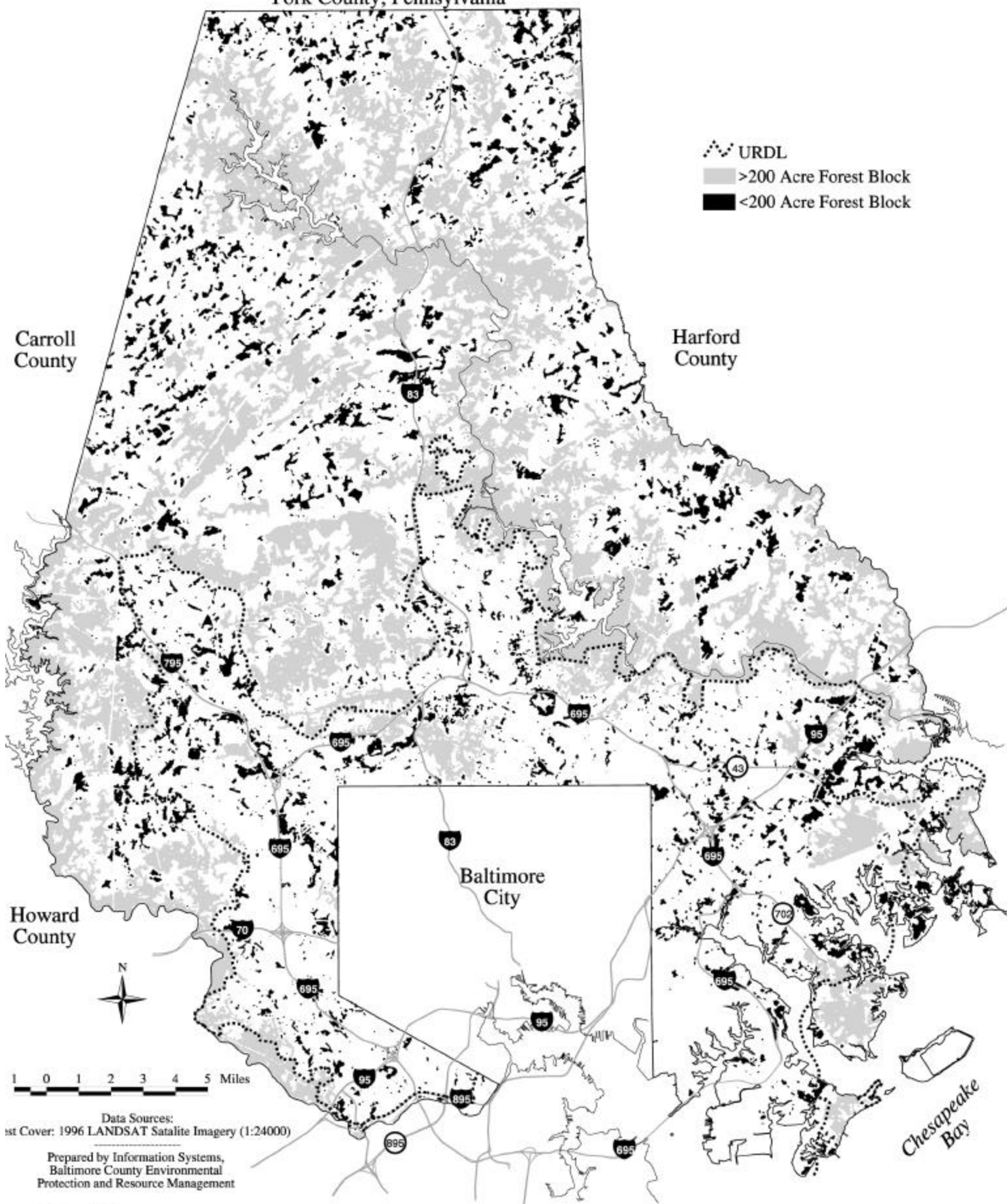
1. Continue to ensure that significant habitats are identified on development plans and continue to seek cooperation in protecting them through modification of site designs.
2. Seek to increase plant and animal habitat in conjunction with capital improvement projects for shore erosion control, stream restoration, wetland creation, and reforestation.
3. Work in cooperation with governmental and non-profit agencies to assess, protect, restore, and create habitats.

Habitat preservation includes long-term conservation of the habitats for upland, forest, riparian, wetland and aquatic plants and animals.

Issue: Protecting the Chesapeake Bay, Tidal Wetlands and Rivers

Baltimore County contains about 175 miles of Chesapeake Bay shoreline. The bay and its tidal tributaries (the Patapsco, Back, Middle, and Gunpowder Rivers) are a unique natural resource. The intertidal zone, where land and water meet, is essential for providing protection and food for waterfowl

York County, Pennsylvania



Map 21
Forest Cover

and aquatic life. Its health is fundamental to restoring the Chesapeake Bay, yet this area is threatened as a result of natural erosion and human activities.



There are numerous recreational and business opportunities related to the bay, such as boating, sailboarding, swimming, water skiing, fishing, crabbing, and bird-watching. Healthy swimming beaches and aquatic populations are essential to bay-related recreational and economic activities. Tidal waters which support a healthy submerged aquatic vegetation (SAV) community will most likely support the citizens' recreational and economic needs. The amount, type, and location of the SAV community is one indicator of the overall health of the tidal waters. These plants provide oxygen to the water and nesting sites for aquatic life.

Baltimore County continues to implement the Waterway Improvement Program, an initiative to enhance the resource quality of the shoreline communities. One component is a dredging program for the maintenance of existing boat channels in creeks and boat access "spurs" from these channels to individual waterfront properties. As part of the federal and state dredging permit requirements, Baltimore County surveys the SAVs in the channels to be dredged to assure that these resources are not impacted. The dredging permits also require that the county implement controls to help prevent future runoff of sediment and nutrients to the dredged channels.

DEPRM's Waterway Improvement Program also includes shore erosion control projects which have stabilized thousands of feet of steep, eroding shoreline with vegetated beaches and structural protection such as off-shore, gapped breakwaters where needed to control erosive wave energy. With the use of natural vegetation for stabilization, the county is introducing citizens to alternative shoreline protection approaches. These techniques are self-maintaining and therefore provide a much longer-term solution. Shore erosion control projects have been completed for many of the county's waterfront parks, and an updated project needs inventory has been completed to prioritize additional areas.

Most of the county's Chesapeake Bay shoreline is privately owned. Some of the county's oldest communities are located along the shore. Historical patterns of development have resulted in slicing the shoreline into multiple lots. This limits bay access to the individual lot owners and impacts each



Protection of the county's tidal wetlands and shorelines is essential for a variety of recreation and business activities.



stretch of shoreline with piers, bulkheads, and other manmade structures. The desire for access to the bay is continuing and has increased development pressures along the shoreline. Water-access communities and subdivisions are highly desired by homebuyers. Baltimore County encourages the use of group piers as an alternative to private piers. A single point of access to the water can serve multiple households, thereby minimizing disruption of the shoreline.

Land development proposals are reviewed for compliance with the Chesapeake Bay Critical Area Program. Baltimore County's program was enacted in 1988, following the passage of the Maryland Chesapeake Bay Critical Area Act in 1984 and the publishing of the regulations in 1986. This program encompasses all of the land within 1,000 feet of tidal waters and all of the southeastern peninsulas. Redevelopment of properties within these areas is limited in the amount of impervious surface on the site, the amount of trees and forest on the property, and the controls on storm water runoff. Tidal and nontidal wetlands are required to have naturally vegetated buffers, which filter the sediments and nutrients in runoff. A Buffer Management Program adopted by the county allows the continuation of maintenance activities and limited home improvements within the first 100 feet of shoreline, known as the critical area buffer. This has relieved homeowners of the burden of obtaining variances from the critical area criteria for many small additions.

The county will improve implementation of the Chesapeake Bay Critical Area Program while maintaining water quality and wildlife habitats.

Actions

1. Continue to implement the dredging component of the Waterway Improvement Program while protecting submerged aquatic vegetation.
2. Continue efforts to protect shorelines from erosion and improve the water quality and habitat value of tidal wetlands; use nonstructural measures, if appropriate, for shoreline stabilization, and enhance tidal wetlands by increasing the amount of native species.
3. Monitor and control upland sources of sediment and other water pollutants carried to waterways as storm water runoff.
4. Review permits for construction of shoreline structures and only allow structural measures where a nonstructural alternative does not exist.
5. Explore beneficial uses of dredge spoil disposal including shoreline stabilization projects and tidal marsh creation.
6. Improve implementation procedures of the Chesapeake Bay Critical Area Program while maintaining the high level of water quality and habitat standards.

Issue: Managing Mineral Resources

Throughout its history, locally abundant and varied mineral resources have played an important role in Baltimore County's economic development. The county's geologic formations have provided recoverable reserves of clays, sands, and gravels throughout many areas of eastern Baltimore County's Coastal Plain. Within the Piedmont physiographic province, the high-quality Cockeysville Marble was used for numerous building projects, innumerable row-house steps in Baltimore City, and renowned historic structures such as the Washington Monument in the District of Columbia. The Piedmont is also a source of other crystalline or hard rock reserves with great economic value, including iron ores, granites, gabbros, serpentines, and gneisses. While small mining operations were once prolific, competition from larger operations both inside and outside the county has reduced the number of active mining operations to a relative few.



The primary issue regarding the county's mineral resources centers on the fact that these resources are non-renewable and must be managed so as to remain accessible where economically recoverable in order to keep building construction costs competitive and to keep Baltimore County self-sufficient to the extent possible. In general, extraction of sand and gravel appears to be declining, as evidenced by the closure of operations in the White Marsh area. Conversely, extraction operations at large hard rock quarries, such as by Lafarge at Texas, appear stable. That operation, in particular, is generally believed to have viability for another fifty years.

Actions

1. Determine the current status of the mineral extraction industry in Baltimore County, the extent of land use conflicts with mining and reclamation, and evaluate the need for the county to intervene in these issues.
2. Encourage a continuing dialogue with the mineral resource industry to raise awareness of mineral resource-land use conflicts, and develop options for their resolution.
3. Identify and evaluate sites suitable for mineral extraction. Develop mechanisms to control pre-emptive development as well as allow the transfer of development density.
4. Assure that post-mining reclamation plans are compatible with surrounding land uses by compliance with the State Surface Mining Regulations.



The Redland Genstar quarry in Cockeysville is one of several large mineral extraction operations in the county.



Baltimore County is situated in a regional airshed that does not meet national air quality standards for ozone.

Issue: Attainment and Maintenance of the National Ambient Air-Quality Standards (NAAQS)

Baltimore County is located in a regional airshed shared with Baltimore City, and Carroll, Harford, Howard and Anne Arundel Counties. It is located in the center of the major north/south transportation route for the Eastern United States. The entire region has been designated as nonattainment for the NAAQS for ozone. Portions of this area also have been designated as nonattainment for carbon monoxide. Region-wide efforts will be required in order to attain these standards. In addition, control programs for sulfur dioxide, nitrogen oxides, lead, and inhalable particulates, for which the NAAQS are currently being achieved, must be maintained in order to prevent future violations of the standards. The regulatory authority for this activity is the Maryland Department of the Environment.

Actions

1. Implement the programs and regulations contained in the State Implementation Plan for ozone attainment. Ozone control activities will include control of new and existing point sources of ozone forming pollutants, as well as transportation control strategies and mobile source controls.
2. Implement carbon monoxide control activities to help achieve the national standards in the region and also to avoid the creation of localized carbon monoxide problem areas. Activities will include the monitoring of development activities, implementation of transportation controls, and control of point sources and mobile sources of carbon monoxide.
3. Maintain control strategies for the remaining air pollutants sulfur dioxide, nitrogen oxides, lead, and inhalable particulates, to prevent exceeding the standards in the future. Mobile source and transportation control considerations will also contribute to the control of these pollutants. New industries will be required to use the best available air pollution controls. In addition, minimization of inhalable particulates from land clearing, development and construction activity sites will be maintained.

Issue: Controlling Radon Pollution

Radon gas is a by-product of the naturally occurring radioactive decay of uranium- and radium-bearing rock formations and soils. When radon gets into residences and buildings, which have been sealed for energy conservation purposes, it can reach levels that represent a significant health threat. Long-term exposure to elevated levels of radon can lead to lung cancer. The Environmental Protection Agency has established what is

considered to be an unsafe level of radon in the home, above which some remedial action should be taken. It is extremely difficult to predict the presence of radon in individual homes or structures because indoor levels of radon are dependent upon individual characteristics and circumstances of each building. Thus, the only way to determine the potential radon threat in a particular home or building is to test the structure individually. Remedial actions are available to reduce the concentrations of radon gas in structures.



Actions

1. Distribute informational materials and make presentations to community and public interest groups to encourage property owners to test for radon, and provide information about remedial options as needed.
2. Identify and map on the Environmental Policy Plans geologic formations in the county with the potential to emit radon gas, and monitor available test results in order to identify potential radon problem areas.
3. Coordinate expanded testing in areas exhibiting a trend of high radon levels and develop a notification procedure for property owners in these areas.
4. Recommend inclusion of radon mitigation features in new construction in areas identified as potential radon problem areas.

Issue: Reducing Global Warming Trends

On a global scale, scientists are finding increasing evidence that the mean temperature of the earth is rising. This phenomenon is caused by the accumulation in the atmosphere of gases emanating from human industrial, agricultural, and deforestation activities. These gases, including carbon dioxide, methane, nitrous oxide, ozone and chlorofluorocarbons, allow the warming rays of the sun to reach the earth, but do not let the excess heat escape. The potential effects include shifts in weather patterns causing droughts in moist areas and heavy rains in deserts, a rise in sea level causing flooding of low lying coastal areas, increased intensity of tropical storms, and the destruction of crops and coastal wetlands. While this is a worldwide issue, the county, nonetheless, can take effective action on a local level.

While global warming is a worldwide issue, the county can take effective action on a local level.

Actions

1. Encourage the conservation of energy and the use of cleaner burning fuels in the residential, commercial, and industrial communities.
2. Reduce deforestation activities and continue forest replanting and restoration programs.

Part 4



Issue: Controlling Noise Levels

Excessive noise is both a public health concern, and a nuisance problem. The state has established maximum allowable noise levels, and requires that excessive noise be mitigated. But enforcement of state noise regulations is complaint-driven and does not help to prevent the establishment of unlawful noise sources. Once a noisy industrial plant or highway is built, it is often difficult and costly, or impossible, to effectively reduce the noise. The county could prevent the need for costly noise mitigation by developing and enforcing site design standards and zoning requirements that avoid noise conflicts.

Action

Consider revising the zoning map to establish buffers or transitional zones in areas where the zoning would permit noise-generating land uses close to noise-sensitive land uses.